

From the house of Amar Chitra Katha and Tinkle

BRAINWAVE™

SCIENCE IS JUST A GAME

Vol. 03 Issue 04
April 2014
48 pages
8-15 years
₹60

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How to conquer it

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Flashcards,
Ace Exams!**

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The consistently high production quality of Brainwave is a pleasant surprise to me every time I see a new issue. The artwork is engaging with a wise selection of diverse content. I believe Brainwave is well on its way to be a premier publication for kids - Rohit Kumar, Scientist at Raytheon BBN Technologies, Cambridge, Massachusetts

To subscribe to the magazine, turn to **page #47**

AD

Exam Blues

Congratulations!

There's good news for you all.

Annual exams of all boards have been cancelled. All students automatically get 90% and above, and graduate to the next grade.

To confirm visit the website -
www.stop-dreaming-n-start-studying.com

Gotcha! I know you are all already stressed out because of the exam season and that you are tired of the fact that every adult seems to have some or the other advice for you. So, I thought I should lighten up your mood than patronize you and add to it. Hence, this PJ :)

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BRAINWAVE™

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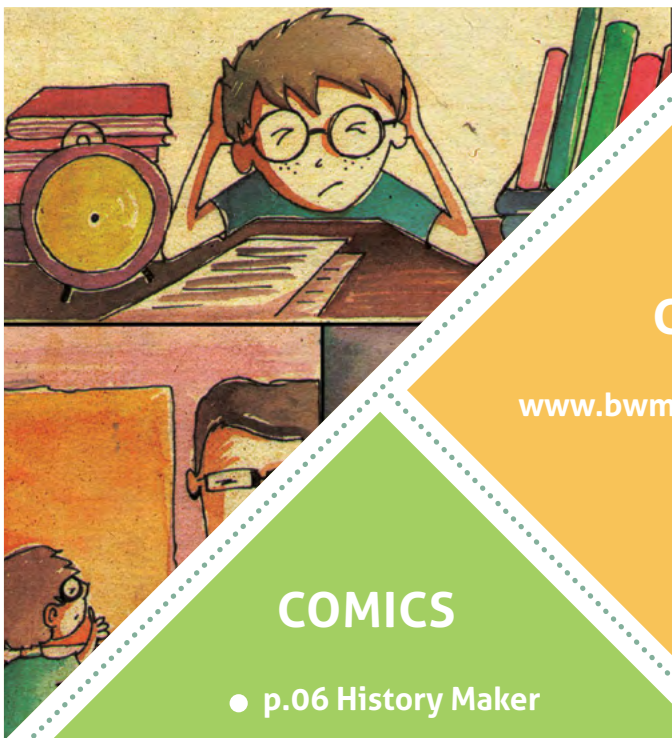
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MEET THE SMARTIES

Beyond the skies, trouble brews.
Danger awaits us, all humans!
Sneaking and lurking in the dark,
Someone's plotting to tear humanity apart.

Much before they act, our friends arrive to
thwart the attack,
1... 2... 3... Go! The Smarties arrive fast.
Yes they are here, look!

The Smarties rarely punch down opponents -
they are peace lovers.
They use not only brawn, but also brains!

The battle's won; let us meet them now,
They are real heroes - take a bow!

Dr. Dodo, dear friends,
is the only Dodo alive.
The wise elderly scientist,
his ideas save many a life!



Skree! is mysterious,
a bearded Toda lady.
Up her sleeves,
she has tricks aplenty!



Young Arby is the great
Indian mathematician.
Sucked into BW Labs by
Dr. Dodo's time-machine,
Grow up to be Aryabhata,
yes he will fine!



Young Alby's none other
than Albert Einstein.
Sucked in time by
Dr. Dodo's Galileo one,
He will soon change the
history of science!



Mr. X is the antagonist,
Top IQ of the universe
is his! Opposing ideology
than the Smarties,
Is he good? Is he bad?
You analyse.



Earth, wind, water and
fire combine to make
Bhoo - an enigma,
She is a superhero -
every villain's dilemma.



Now that you know them, see their wonders,
The episode begins, the Earth's saved
from plunder.

Plant a Memory-Tree

by Pushkar Samant

Here is a simple way to enjoy studying and remembering concepts that involve classification or hierarchy.

You often have to study concepts that involve classification or hierarchy. Here's a way to make the study interesting as well as memorable, literally.

Step 1: Select one such concept from any of your textbooks. Take a blank paper and draw a tree trunk. Write the name of the concept, e.g. classification of animals, on the trunk.

Step 2: Add branches to the trunk, each representing a topic of the concept, e.g. 'vertebrates' and 'invertebrates' are topics related to the 'classification of animals' topic.

Step 3: Add sub-branches to each branch, each one related to a division of the topic represented by its main branch. In this case, the 'invertebrates' branch will have 'protozoans', 'worms', 'molluscs', etc. as sub-branches.

Step 4: List out the definitions, description, examples or fun-facts related to each sub-branch. Add each of these as a 'leaf' to that sub-branch.



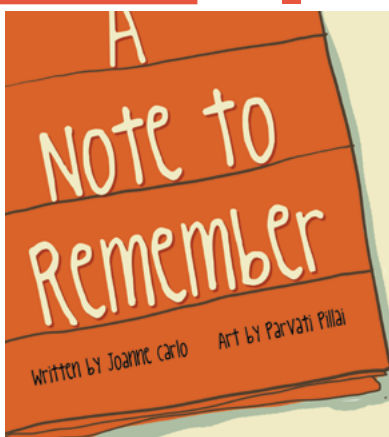
Your memory-tree has been planted quite well! All you have to do from now on is 'water' the tree regularly - glance at it or read it out loud at least once every day.

Though you have planted this memory-tree on a paper, it will grow in your brain. The more you water it, the better its growth will be!

Memory trees are one of the most effective ways to store information through visualisation.

Visual memory includes pictures, symbols, numbers, letters and especially, words. Students can look at a word or a concept, form an image of that word or concept in their minds and be able to recall it whenever needed.

You can plant a number of such memory trees in your study room, making the learning process fun. The knowledge you thus gain would be everlasting. While you do that, do not forget to email pictures of your trees to us! ■



Okay, so your brain's overloaded with science, maths, geography and English. There's just a tiny bit of space left, but, history needs more than a tiny bit of space, doesn't it? It's needs the whole of your brain!



As much as you think that history is a very impractical subject, it has more uses than you can imagine. In order to understand the present or estimate the future, we need to know what happened in the past.

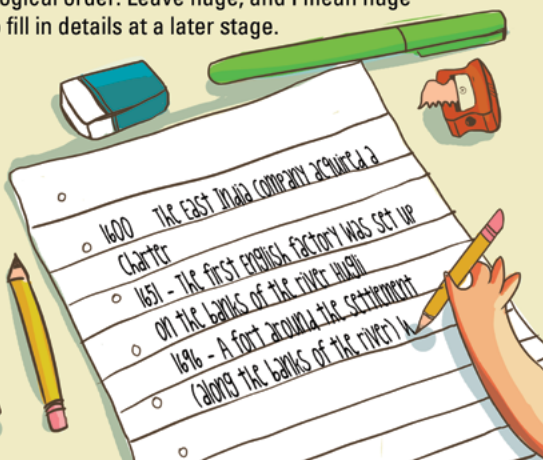


One quantifiable use of this is that it helps us take effective business and administrative decisions. Makes sense? And there are many such uses.

But, how do we go about studying this vast, information-heavy subject? Let's find out...

Your history textbook is going to be your new best friend for the next couple of days. Settle down with it, skim through it, and get to know what each chapter's about.

Once you are done flipping through your (very slim) history textbook, list out all the big events in chronological order. Leave huge, and I mean huge gaps, to fill in details at a later stage.



Now, read each chapter, this time, with a close attention to detail. You might need to read it two or even three times for all the important details to stand out. Once you've figured what's important, pen it down next to the relevant points in your list.



Next, compare your notes with your history class notes. If you've missed out on anything, add that to your list.

There, phew! That wasn't so difficult, was it?

Finally, under each heading and sub-heading in your list, write an outline or description of that event in your own words. Add cute arrows, illustrations, colours and post-its to make your story more memorable. Keep in mind the big picture - why it happened, where it happened and it's repercussions. We don't want to lose our focus, do we?

Now, you don't need to panic just because your exams are around the corner, do you? You have your notes for quick review! Don't be surprised if you have a whole lot of playtime just before your now-not-so-scary history exam!



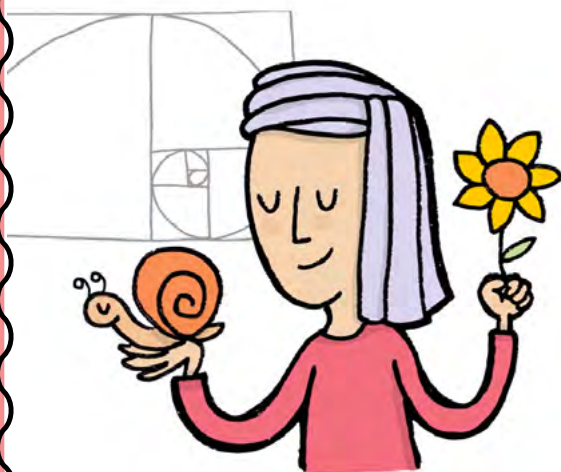
While revising, hide your notes and try recalling all that you had written down. You'll figure out what you know and what you don't. You can then spend more time on what you don't know. Taa daa! History, done!



Wondering why this works better than trudging through your textbook a few days before the exam? There are many reasons. One is that you've zipped your history textbook into short, compact notes. Zipped files take up lesser memory, don't they?



The End.

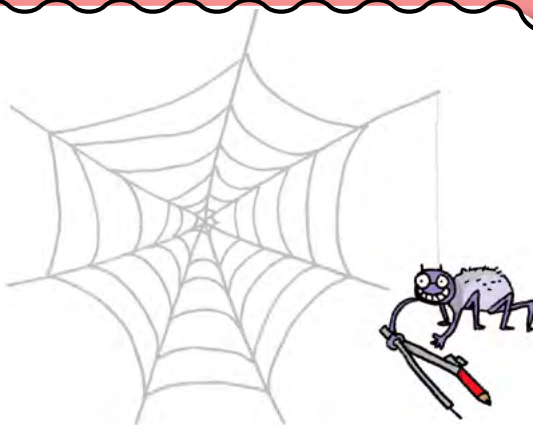


Till 1202, people across the globe used Roman numerals. They switched to modern arithmetic when the Italian mathematician Fibonacci wrote the *Libre Abbaci*.

Fibonacci also found that things in our nature and the universe, like plants, insects and planetary distances, contain the same pattern of numbers (called the fibonacci series).

Artwork: Alicia Souza

A spider's web is one of the most dramatic examples of perfect geometry in the natural world. Its sticky symmetry has proven to be perfect to capture prey for nearly 140 million years! The most common type of spider web is the orb web.



Overcome That Test Anxiety

by Priyanka Talreja

It is that time of the year again. Stress bundles up and so do the chapters yet to be revised. A lot is riding on this test. The best way out? Stay calm, and plan well and ahead!

Image Source: Wikimedia Commons



Test anxiety is a known devil. At one point of time or the other, we have all had butterflies in our stomach. But, why does that happen? Knowing it will help us overcome it.

Test anxiety is a type of performance anxiety. This is the feeling someone gets in a situation where performance really counts and hence, the pressure to do well is on.

Other than butterflies in the stomach, test anxiety can cause tension and headaches. Some people feel shaky, sweaty or experience a faster heart beat as they wait for the question paper to be given out. A student with really strong test anxiety may even feel

like he or she would pass out or throw up. But let us tell you, this can be overcome. Staying calm and having a systematic approach is the key.

Begin by:

Preparing well in advance

Preparing for exams should be an ongoing process and not a last-minute ritual. If you indulge yourself in eleventh hour cramming of study material, your brain will not get enough time to comprehend all the matter you have studied.

This leads to uncertainty and stress.



Create a time table. Write down the number of days left and divide the remaining days as per the subjects to study. This way, there is a balance between the subjects and days.

Get enough sleep

You might be surprised to know that sleep is directly related to stress! Getting less than 6-7 hours of sleep creates a sleep deficit. This makes you less sharp, mentally. The level of alertness of the mind is called arousal. A certain degree of arousal is essential for optimal performance. So, spending your sleep hours on studying is not a great plan. It will only backfire! A fresh mind can work wonders. Try it out and see for yourself!

Practice old exam papers

This is by far one of the most effective ways to prepare for any exam.

Get hold of previous year's exam papers and help your mind get used to the format. If you do this well ahead, you can also practice spending the right amount of time on each section. Doing this not only gives you an idea of the questions and the question paper format, but also helps build your confidence.

Don't revise till the last minute

Study well in advance and be prepared. Do not revise till the last minute. Doing this will leave you feeling muddled and anxious.

Adopt a positive frame of mind

Lastly, before you enter the exam hall, adopt a positive frame of mind. Tell yourself that you can do it. Close your eyes and take deep breaths to ensure adequate oxygen in the system. This should be a good way to start. So, all the best! ■



FEAR

The biggest enemy

by Priyanka Talreja



Artwork by: Somesh Kumar

Joanne is all prepared to give her final exam. She has done all the right things and is completely ready, until the pressure of performance gets to her and she starts panicking. Will she give in and fail, or overcome it and succeed?

In a land not so far away, Fear was talking a walk in a lush green garden. As he walked, the grass underneath each of his steps curled up and shrivelled. Fear has its ways. This was a great season for him. Students across the globe had to sit for their exams! He could feel himself grow stronger. All students were scared. They were giving in to Fear.

Not too far away, stood Potential. He was furious. Furious beyond belief. He looked at the scared students and decided that this has to stop. He was not going to just stand there and watch all students perform terribly just because they let Fear take over like always. This time around, Potential decided to turn the tables.

In the spilt of a second, Potential split himself into millions of tiny pieces and flew towards Earth. All the part of Potential had a single agenda - help the kids realise what they were really capable of.

Soon, a tiny part of Potential was standing on the desk of a student. He knew the kid well. It was Joanne. She was well prepared and put in all the effort she could. She just needed to relax and focus.

"Easy Joanne, easy. Calm down. Close your eyes and relax. Think clearly!" Potential encouraged Joanne, in his trademark confident tone.

"But this is the subject you hate! This is Maths and it is so vast. Those formulae and theorems, do you even remember them now?" roared fear. He had been there all the time. He would not let any student relax!

"Why are you doing this, Fear? Joanne knows

the subject well. You just have to let her focus," said Potential.

"I am not doing anything, Potential. Joanne has invited me here. She is not confident enough. She is panicking and hence, cannot remember a thing," said Fear, with an evil grin.

"She will calm down. She has done all the right things. She planned and prepared well in advance. She practised hard. She revised enough. Yesterday night, she ate light and healthy. Her brain is fit and ready to work efficiently. She just has to focus," said Potential.

"Your throat is dry, Joanne. Remember the bubbly soft drink you had last week? If only you could have that now!" teased Fear.

"Drink some water, Joanne. Remember how Dad told you that the brain is nothing but 30 per cent water? He also did explain how dehydration can lead to neuronal damage sustained from elevated stress hormones. Sufficient water in the brain helps it work at its optimum level. Have a sip!" said Potential, softly.

Joanne drank some water and felt better. Before she could clear her head completely, Fear butted in, again!

"You are feeling tired, Joanne" Fear spoke into Joanne's head.

"No! You are not feeling tired, Joanne. You had a good sleep last night and you walked to school in the morning. You are completely alert," said



Potential in a calm, reassuring tone.

"How does walking to school help at all? She is nothing but a bundle of nerves. She is so scared," teased Fear, as Joanne began to sweat.

"Walking helps a lot, stupid Fear! It has increased the blood flow to her brain. Since she has been doing it regularly, her BDNF – the chemical that is instrumental for the development of new nerve connections - and brain tissue that's responsible for higher reasoning has received a boost," explained Potential.

Suddenly, Fear's expression changed. He did not seem as confident now. He felt weaker. "You are so sleepy, Joanne! Remember your bed? Your warm, cosy bed? Only if you could tuck into it right now and doze off! What is the need for this exam? Why do you have to do this?" yelled Fear, without giving up.

"That is not true, Joanne. You are not sleepy either. You slept for eight hours last night. You had also revised well over the last one month. Remember that?" encouraged Potential.

"Hahahahaha!" mocked Fear. "How will she

remember that? It was days ago!"

"She will. Enough sleep helps retain what she studied. Every single day, she woke up with a fresh mind and has retained everything she studied," said Potential.

Just as he finished, Joanne saw a flash of her revision notes. In a jiffy, it all came back to her. She could clearly recall everything, even the formulae! Her brain was indeed functioning at its optimal best. There was no need to fear. Fear sensed this, grew really weak and could do nothing but vanish to bother another student.

Joanne took a deep breath. Then another. That helped her relax. She started studying the question paper. She felt her confidence grow. She realised that, all the while, she was unnecessarily frightened.

She could see that all the questions asked were from the question paper of one or the other previous years. She had practised them all! It's just that they were worded in a different way. Joanne's face lit up and she began writing. Potential stood there, happy and smiling. Fear had completely disappeared from Joanne's system and there was no looking back! ■



Exam time is when students have to study hard and buy a cola on the way back

The content published below has been taken from the book titled - *Junk Food Busted*, V



Folks, of the five **Joint Parliamentary Committees (JPC)**

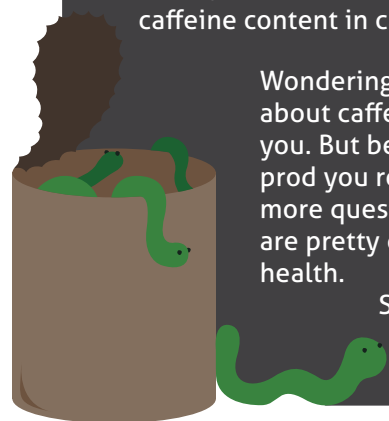
constituted in the history of independent India, the one set up in 2003 was to investigate the issues arising out of CSE's study on pesticide residues in soft drinks.

Yes, There are pesticides in your soft drinks. In 2003, CSE tested various soft drink brands and found them to be contaminated with high levels of pesticides.

The study actually opened a Pandora's box. Besides deciding on pesticide levels, it also initiated an inquiry into the caffeine content in carbonated beverages.

Wondering what the effects of caffeine are? Well, you know you. But before that, let me prod you real hard. More questions on caffeine are pretty critical to your health.

So go on



What is caffeine?

Caffeine is a mildly addictive stimulant drug used in soft drinks as a 'flavouring agent'. It is a naturally occurring substance found in the leaves, seeds or fruits of at least 63 plant species worldwide, including cocoa beans, kola nuts and tea leaves. However, artificial caffeine is used in soft drinks. The most commonly known sources of caffeine in our food are coffee, tea, soft drinks and now, energy drinks.

The ill effects of caffeine

CSE cited studies to show that excessive caffeine consumption could lead to insomnia and disorders such as insomnia, anxiety, irritability, and deviation from normal heart rate.

A major concern about caffeine is that it increases the excretion of calcium. Early adolescence is the time of peak calcium deposition in our bones, and caffeine interferes with the process of calcium absorption.

Alarmingly, a very large proportion of young people are ingesting caffeine through soft drinks. And they are increasing their caffeine intake through and through, riding the energy drinks.

The real use of caffeine

Soft drink manufacturers claim that caffeine is added just as a 'flavouring agent'. CSE contested that. A study conducted by Johns Hopkins Medicine (Johns Hopkins Hospital) in the year 2000 had found out that caffeine could not be detected as a flavour in soft drinks. And its use was more to do with inducing addiction to the drink than flavour.



to be extra careful about what they consume. It is easy to get tempted home. But, you must think 10 times before doing that.

compiled and researched by the Centre For Science And Environment (CSE), and published *Why and How*. Brainwave has acquired all the necessary permissions to use this content.

a can of worms.
de residue
quiry into the
ted beverages.

the big deal
We will tell
at, we want to
d to ask some
n issues that
for your
n, think hard!

Q : Why is caffeine added to carbonated beverages?

Q : Is it really for flavour as claimed by the manufacturers?

Q : What are the ingredients of a soft drink?

Look at this chart to know what a can of soft drink exactly has:

OTHER ADDITIVES: Emulsifying agents, stabilising agents and thickening agents.

CARBON DIOXIDE: Added in liquid form to make the drink refreshing. Through it's mainly for stimulation of the mouth's mucous membranes, it adds a sensation that the soft drink is colder than it actually is.

SWEETENERS: Most lethal component. The high sugar content is the major reason why we are concerned about your frequent consumption of soft drinks. Did you know that energy drinks have 13 teaspoons of sugar in a 500 ml can?

ANTIOXIDANTS: Added to prevent reactions that destroy aromatic substances.

PRESERVATIVES: Added to increase the life of the product.

COLOURING MATTER: Added to make the drink attractive.

ACIDS: To balance the sweetness.

AROMATIC SUBSTANCES: Added to give a pleasant taste and better stability.

WATER: Accounts for 86-92%

86-92%

Biological scientist and nutrition expert Dr. Hans-Peter Kubis said in an interview that such a high concentration of these substances has potential health consequences including rapid or irregular heartbeat, elevated blood pressure, sleeping trouble, weight gain, muscle twitching, diarrhoea, nausea, vomiting, and even sudden death in some cases.

Not consuming soft drinks at all is not a practical solution. We aren't telling you if you should or should not. We just want you to be more aware of what you are consuming, and take a decision yourself.

BW



LESS SLEEP, LESS SCORE

by Dr. Dodo

No matter how tensed and unprepared you feel you are, your brain needs the rest. Bhoo explains why.

As usual, Bhoo was flying around the Earth post midnight. She stopped mid way when she saw that the lights in the room of a kid she knew were still on.

Peeping through the window, she saw John, with a textbook in his hand. He was studying hard for his final exams.

"Why aren't you sleeping, John?" Bhoo asked.

"I have a lot to study, Bhoo! I simply cannot afford to sleep," John replied.

"No, you are wrong. Your brain and body need rest. Less sleep leads to nothing but less score," Bhoo asserted.

"How is that?" John asked, puzzled.

"Staying up late and cramming your brain with information isn't going to help. Sleep helps the brain organise information and embed it in your memory. You need to get at least 6-7 hours of sleep for that!" explained Bhoo.

"So, you mean that no matter how much we study, we need enough sleep to absorb all that?" John asked.

"Right! Studying way past bedtime is a



bad idea. You should get away from the books for a while, to unwind properly," Bhoo continued. "Lie down calmly and try to relax. If there is some inevitable last minute studying to do, do it early in the morning."

John knew Bhoo well enough. So, he took her advice. "Thank you, Bhoo. I shall sleep now. Good night," John said, as Bhoo flew out of his window. ■

DID YOU KNOW:

- ✿ While sleeping, our brain usage is minimized. It relaxes and refreshes itself, to function properly when awake.
- ✿ When we are asleep, the brain involves itself in some important processes such as working on the data we have studied during the day, memorising things, storing the data, strengthening neuron connections, making space for new data, etc.



Lights... Sound... Study!

by Joanne Carlo

What's the ideal space to discover your study mojo? Let's find out!



You tried studying on the couch. I mean, the television was on mute and you'd tuned out your brother who wouldn't stop chatting on the phone. Then why weren't you going beyond the first page of your textbook?

So, you found a perfect corner on the verandah. But alas, the gently swaying trees and delicately chirping birds plotted against you – before you knew it, you'd joined the chorus with your not so gentle snore!

The day is almost over, and you haven't covered a fraction of what you were scheduled to. Why? With the exams drawing close, you can't afford to waste any time!

Well, it's because you haven't found a proper study space. It's important to clear yourself of distractions and clutter, to study well.

How do you select the space? Here goes:

- 1) Pick a place that's not too cold (it slows you down) or too warm (you might sleep).
- 2) Light is very important, you should be able to see without strain or discomfort.
- 3) If clean, your room is a great study place – just avoid the bed, please. Try using a table that's large enough to hold everything you need (except the comics, of course).
- 4) Choose quiet environments. If music improves your mood, play it softly.
- 5) Select a chair in which you can be seated for long periods without straining your back.
- 6) While studying a subject, keep the books of other subjects away. Don't be upset about all the other things you have to still do.

A lifetime of studying awaits you. Better get it right now, than later! ■



The Time Travelling Kumars

Sherlock Diaries 11

Written by:
Joanne Carlo

Illustrated by:
Pooja Prabhakaran

As the Kumars and Holmes bury themselves in the wonders of technology, Dinesh has to bid the exploration party adieu. His exams are round the corner and he has to prepare.

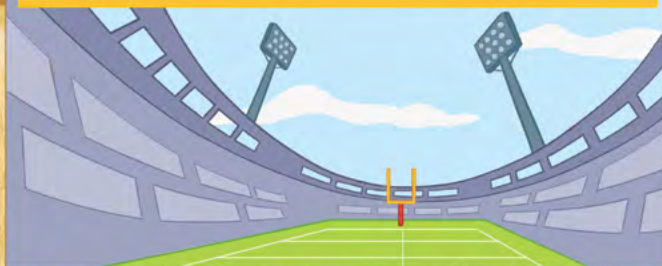


Ah, worry not, dear boy! I'll let you in on a little trick once we get back, something I call 'my Mind Palace'!



Previously...

The Kumars and Holmes are at the MetLife Stadium, East Rutherford, New Jersey. The Super Bowl has come to an end.



It could not possibly be a good time to set out for your home and laboratory, Dr. Kumar.





In the blink of an eye, the adventurers finally arrive at the right destination – their home!

Now, about the mind palace. Let me see how I can explain it to you. I would begin with remembering the layout of your house. It is a habit of mine to get an exact knowledge of my surroundings. Here is the kitchen, a food source, the study, a reading source and the much talked about Dr. Kumar's laboratory!

And now, Dinesh, we are done with work. It's time to play!

But, Mr. Holmes! I haven't even opened my books yet.

Yes, yes, your exams! Don't worry, it is a problem that is not quite so. Give me fifty minutes of your time. Studying for the exams boy, it's all just a game...



I agree with Mr. Holmes, son. It's all about technique. Technique of enjoying what you study and remembering it well!

There are many techniques that help you improve memory, enhance recall and increase retention of all that you study!

I'm going to leave you two at it. I desperately need my much missed chai. Geeta?

Yes Kumar, I'll make us some fresh masala chai. Mr. Holmes, would you like some? It's the Indian version of the tea you Britishers love so much!



Indeed, that sounds like a delicious change from Mrs. Hudson's tea. A sandwich and a cup of tea, and off to discuss Mind Palace, where nothing is ever forgotten!

In the study room...



My boy, you worry far too much. Now, there are many ways and methods to learn and remember things, but I prefer Mind Palace.

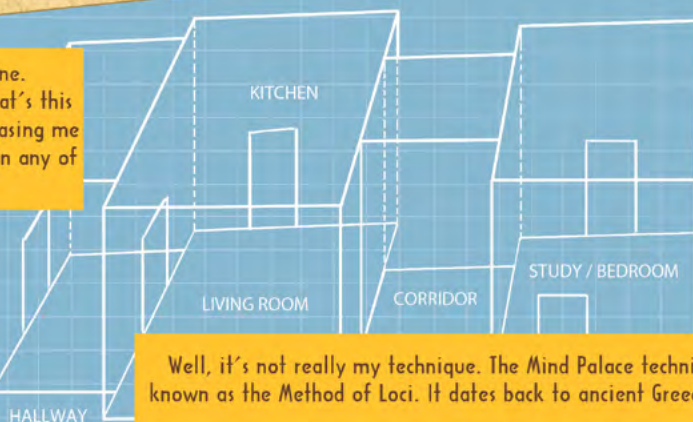
Mind Palace, it is nothing but a memory technique, which, in theory, ensures that you never forget a thing, boy. Ever.

So, how do I use it to my advantage, Mr. Holmes?



Yes. For that, all you need is a little bit of time and a very, quiet place where no one disturbs you.

Time, done. Silence, done. Now do tell, Mr. Holmes. What's this technique? You have been teasing me far too long. Did you use it in any of your adventures?



Well, it's not really my technique. The Mind Palace technique is also known as the Method of Loci. It dates back to ancient Greece and Rome.

You begin with memorizing the blueprint of a place that you are familiar with. Noticed how I created the blueprint of this house in my mind as soon as we landed?



I did notice it! I first wondered if you were in your senses! But, knowing you, I knew there would be a reason to it.



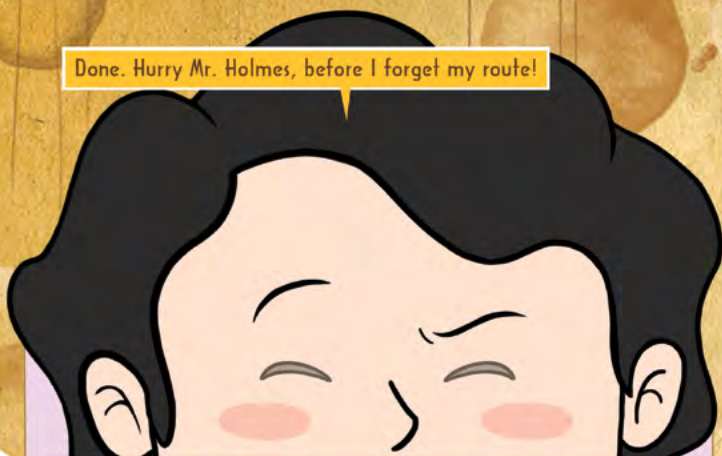
Yes, there is. Now, close your eyes and think about a place you know quite well – your house or your school. You could even think about public places, your route from school to home, and beyond – the larger and more detailed the place, the more information you can pin to it.

Done, and then?



Then, you'll need to define a specific route through the palace. Are you walking down the stairs from your room to your parents' room? Are you sneaking into your dad's lab? Running through the lawns?

Done. Hurry Mr. Holmes, before I forget my route!



Don't lose your patience! Concentrate hard.

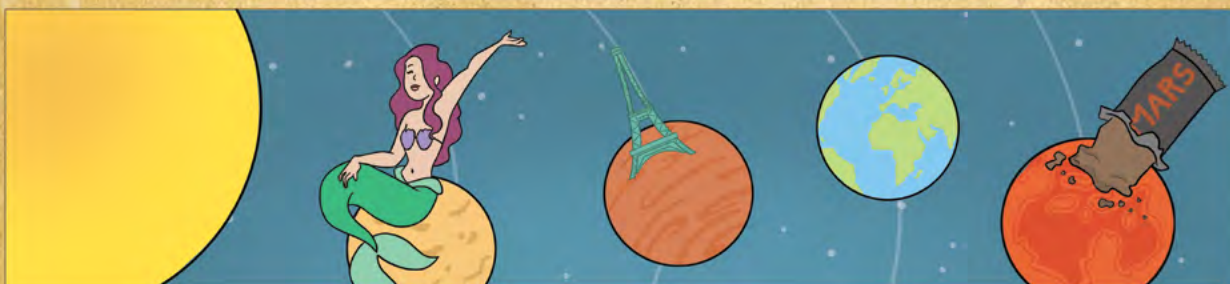
Once you are done identifying your route through the place, identify markers along it. For example: 24 stair steps > 4 chairs around the dining table > eighteen rose bushes in the lawn, etc.

I stress again, the more familiar you are with the place, the easier it will be for you to apply the technique.

But Mr. Holmes, what if I forget a few details?



Well, it would be nice if you tried not to. Maybe, in your free time, you can keep mentally walking around the palace and ensure that it is completely real in your mind.



Once you are done with that, you can begin placing items which need remembering along your route. For example, if you are trying to memorise the planets of our solar system, you could start by placing Mercury on the first marker, by having a mermaid sit on it. Then, place a famous venue in the second marker for the second planet – Venus. Go on until all the items have been placed. The trick is to be as creative as possible, so that when you think of that particular room, you cannot possibly ignore the marker and the concept you have placed on it.

Now, there's a palace in your mind! Your Mind Palace is ready. Make the most of it!

Oh wow, Mr. Holmes! That does sound easy AND brilliant! Is this how you solve your cases? With your Mind Palace trick? Awesome! Indeed, it's a cool Sherlock-ean secret. Wait till Shyam, Albert and Syed hear this.



Yes my boy, it is easy. The trick is to engage with the information you have to learn and make it familiar and relevant enough to you that it stays in your mind for ever! Perfect for all your theoretical study, Don't you think?

Our minds are machines of staggering capacity. Techniques like this, once adapted to, will come naturally to you, just like our reflexes!

The science behind this? Well, when we first think of the information, it is placed in our frontal lobe, making it short term memory. It'll be there for a couple of days until it is moved away into the subconscious to make room for more relevant things. These kinds of techniques help you ensure that the information sticks there for a long time. And taa daa! Ready, set... exams, here we come!



To be continued...



*Here are a few apps that can help you with your studies.
They can be real saviours during the final exams season.*

by Alby

Be Studious!

Instead of jotting down the daily class schedule, homework and assignments in a planner, or noting them down in a notebook, switch to Studious. This app lets you set due dates for assignments and will remind you when deadlines are approaching. You can even create a timetable for exams preparation.

Forgot to silence your phone before a class? The app will silence your phone automatically during the time slots you've scheduled on your calendar!

Price – Free

Availability – Google Store

Rating – 4 stars

App registered as - Studious ■

No More Chemical Imbalance

The Chemical Touch app has everything you need to know about the periodic table. This touch-sensitive periodic table makes chemistry lessons interactive.

Select different elements and learn about their properties. Sort the table into different colours to identify trends and hopefully, ensure that the periodic table gets embedded into your memory. If you need in-depth explanations of different concepts, the app will show you the relevant Wikipedia entries as well!

Price - US \$ 0.99

Availability – iOS devices

Rating – 4.5 stars

App registered as - The Chemical Touch ■

What's the Formula?

Remembering the right formula to solve a math problem is a real task sometimes. The 'Math Formulas' app is your saviour in such situations.

It gives easy access to frequently used formulae and lets you favourite the ones you refer to the most. It even delves into calculators, geometry and probability, and displays related images so that you can put the formulae into perspective. However, we suggest that you use this app only to practise and not during revision.

Price - \$ 0.99

Availability – Google Store

Rating – 4 stars

App registered as - Math Formulas ■



Image Source: www.mathable.com

FLASHCARD
NEW INFO
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PLAY WITH FLASHCARDS

by Pushkar Samant

**THESE HANDY CARDS ARE FUN TO STUDY WITH.
LET'S MAKE FLASHCARDS.**

FLASHCARDS ARE THE MOST EFFECTIVE AND EASIEST WAY TO LEARN AND REMEMBER NEW INFORMATION. THEY SIMPLIFY AND CONDENSE INFORMATION SO THAT YOU ONLY LEARN THE IMPORTANT STUFF. INSTEAD OF GOING THROUGH EACH PAGE OF THE TEXTBOOK, MAKING AND USING FLASHCARDS IS A GOOD IDEA.

THIS IS A NICE WAY TO ORGANIZE YOUR EXAM PREPARATION IN AS EFFECTIVELY A WAY AS POSSIBLE, WHICH HELPS YOU IN MEMORIZING MORE IN LESS TIME. ANOTHER KEY USE OF FLASHCARDS IS THAT THEY HELP YOU TAKE ADVANTAGE OF SHORT PERIODS OF TIME THROUGHOUT YOUR DAY BECAUSE THEY CAN SO EASILY BE CARRIED WITH YOU ANYWHERE YOU GO!

Here are few tips for making flashcards

- ★ Choose the most important facts or concepts from each lesson. Use your own words unless a specific definition is required.
- ★ Label the cards with a subject title and relevant date. You'll be able to categorise them for various types of quizzes and tests.



✿ After you prepare them, ask your parents or siblings to ask you the questions on them.

Benefits of flashcards

Flashcards exercise the mental process of active recall i.e. given a question, one produces the answer.

Since the order of flashcards can be shuffled, they prevent you from simply memorizing the order of the answers in long-list items.

Flashcards are effective memory-aid tools that can help students learn new material quickly.

You can reverse the flashcards so the answers can be seen first and you recall what the original questions were.

ROLLWAVE

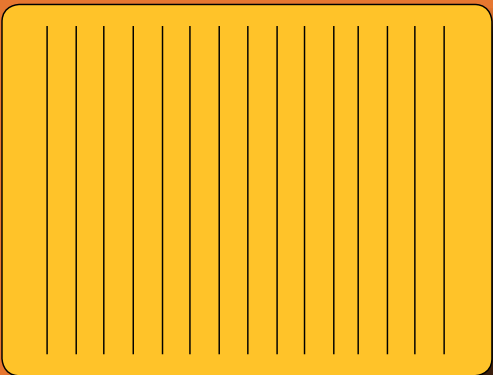
ROLLWAVE

ROLLWAVE

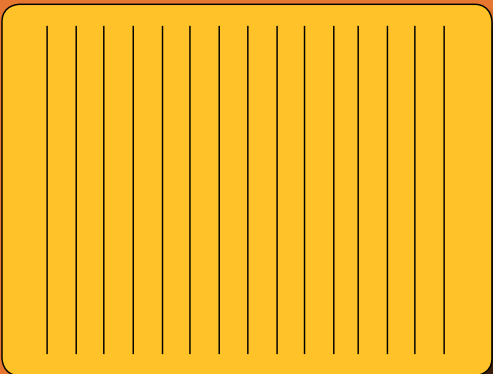
ROLLWAVE

BRAINWAVE

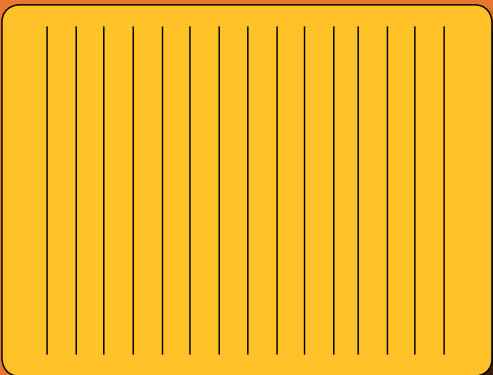
REWRITE



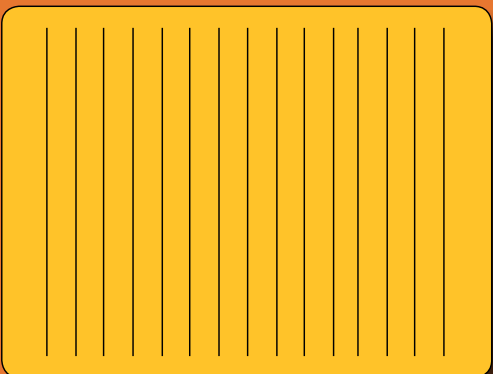
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REWRITE





EXAM TICKLES

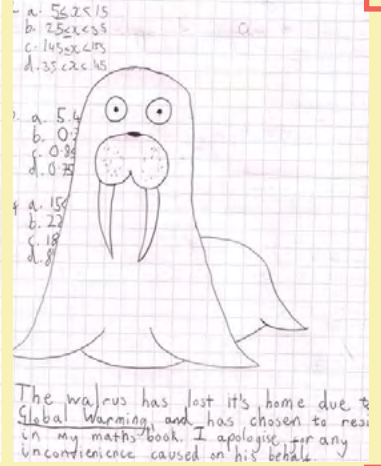
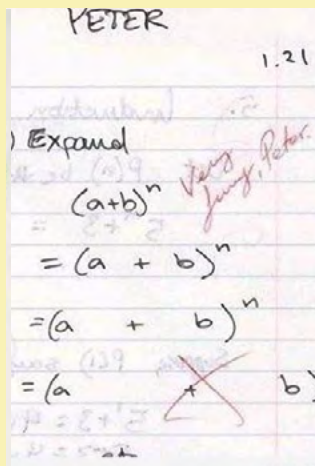
by Joanne Carlo

*Exams come parcelled with loads of studying and revisions.
But too less (or too much) of studying, and this is what happens!*

Image Source: Wikimedia Commons

23. Sketch a human body and locate the following:

- Pituitary gland
- Thyroid gland
- Thymus gland
- Adrenal gland
- Pancreas
- Ovary (females)
- Testes (males)



If your tummy is still aching from all the laughter, then we've done our job right.
But hey, hey, hey! Don't get any smart ideas, okay?
Remember, it takes more than funny answers to achieve exam success!

Here are a few tips to keep in mind while giving exams:

- Use the toilet before you sit down for the test. It helps you de-stress and concentrate better!
- Put in your best, your absolute 100%. Before you know it, those few hours will fly by and it will all be over.
- Read ALL the question carefully before answering. It isn't a race and you aren't going to win any prize if you finish first. Be patient.
- In case you don't understand the question, ask the supervisor or teacher. They wouldn't mind solving your doubts!
- If you don't know the answer, leave it for that moment. Come back to it later. Who knows when the correct answer strikes?
- Remember, if you don't know the answer, the world is not going to end. Keep calm, be cool.
- After you've finished your test, go through the entire answer sheet twice. You may have left out a crucial question or have written a wrong answer!
- Last and most importantly, have fun! Stay motivated even if you do not know something. You are a failure only if you give up. ■



History on walls

by Pushkar Samant

Do you find it difficult to remember history facts, names and dates? This simple trick is going to save the day for you.

History is a huge subject that includes major events - kingdoms, battles, birth days and death dates... you name it and it is there.

Though reading all this is fun, things become nasty when its exam time. We remember only a few things and end up mixing up a lot of facts. We begin creating our own history for the examiner!

How can we avoid this?

To remember facts and events of history, you can make a timeline on your study room wall. A timeline can easily be created on the back of an old poster or a large piece of paper. Although it can take some effort to create, this method makes learning easy because it is all out in the open, for you to absorb and assimilate at one go.

You don't have to try to make a timeline of the whole history textbook (you can, of course, if you have the patience). Choose a few different periods, or focus on just a few important events.

You can start by drawing horizontal lines, like in the image above. Each line represents a particular age or period (e.g. Stone Age or 1857). On each line, stick images of each event that occurred during that age or period. Beneath each image, write down the highlights of that event.

The lines can either be horizontal or vertical. Choose what is most convenient to you or based on the space available to you.

By creating a timeline, you start storing the facts in your visual memory. The sequence becomes easy for you to remember, and hence, you are less likely to mix up the facts. ■

Memory is spread out everywhere. There's verbal memory, visual memory, audio memory, muscle memory, all sorts of memory! The more your brain does with the information, the more you will remember.

The first ever Student Board is here!

We wanted to select only four. But, you all performed so well that we were forced to select seven, one of whom was 15+ and not eligible. Here are the final six:

www.bwmag.in/student-board

BW STUDENT BOARD



Advait Athreya, 15
Chinmaya Vidyalyaya, Chennai



Pratul Venkatesh, 11
National Public School, Bangalore



Mukund Rao, 12
P.S.Senior Secondary School, Chennai



K.Revanth, 16
Vana Vani matriculation, Chennai



Udita Gowdety, 9,
Kennedy High, Hyderabad



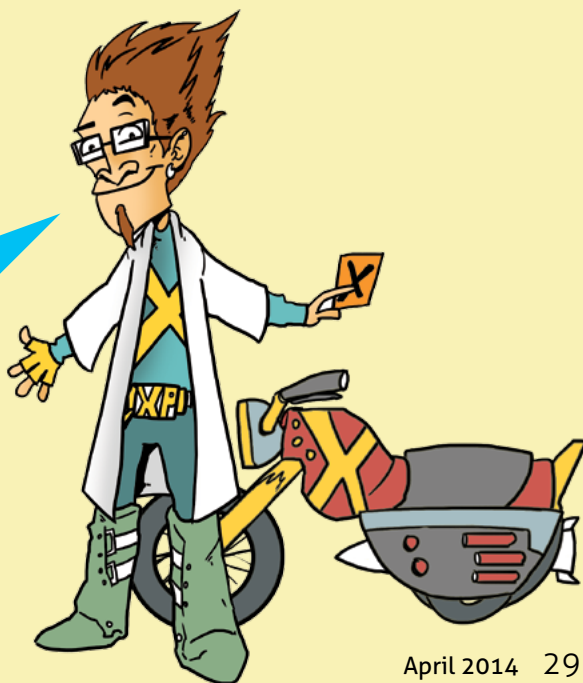
Ritvik Upadhyay, 14
Kendriya Vidyalaya, New Delhi

Join us on our Fun-do video channel as *Mr. X* performs some amazing experiments and *X-plains* the science behind them.

Mr. X will perform and publish your experiments too! Just email them to brainwave@ack-media.com

You Tube

www.youtube.com/Brainwavemag

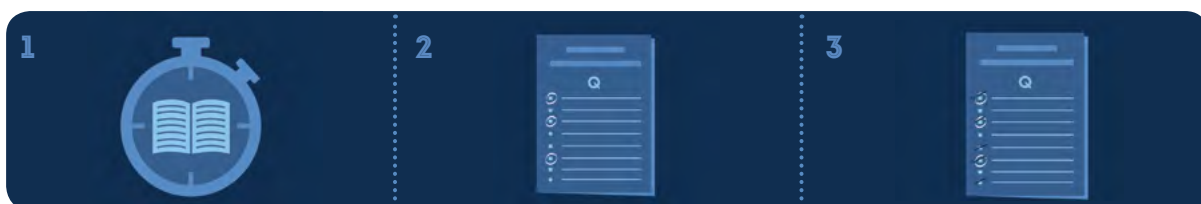




WRITING THE RIGHT WAY

by Priyanka Talreja

Our heart begins to race as soon as the exam paper lands on the desk. In a rush to start, very often, we do not make the right decisions. Here are a few tips that can help you organise the whole process well.

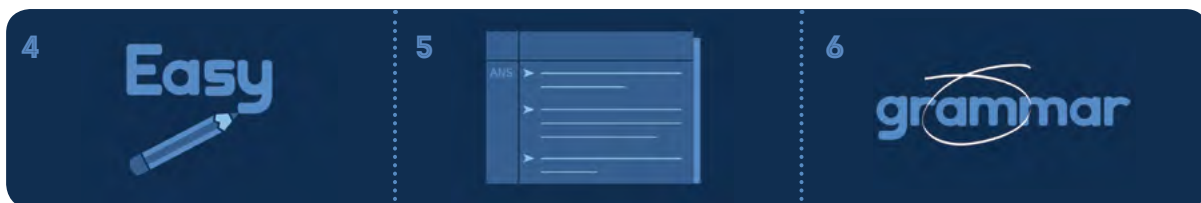


EXAMINE THE EXAM PAPER

STEP 1 : Begin by reading through the whole exam paper. Allocate the first 5-10 minutes of the exam for doing just this. If you can, re-read the paper to be sure that you have understood all the questions and choice options correctly.

STEP 2 : Now that you have understood all the questions, circle the ones you feel you are the most comfortable with.

STEP 3 : Finally, tick the questions that you are sure you can answer correctly without any errors whatsoever.



WRITE RIGHT

STEP 4 : When you start writing, it is best to attempt the easy questions first. That way, you will be spending time writing what you know best. Spending time over questions that you don't know answers for isn't advisable until you finish answering the rest.

STEP 5 : Each answer has a few important points that need to be covered. Starting by making a rough note of those points and creating an outline of the answer is a great approach. That way you will not get overwhelmed or sidetracked in the middle of an answer.

STEP 6 : While working on the outline, don't be too particular about the grammar and spellings.

7



8



9



10



PRESENT WELL

STEP 7 : Presentation is as important as writing the right answer. Avoid huge chunks of text. Break down your answer as per the important points. Underlining and highlighting these points not only makes the answer look better but also ensures that the examiner doesn't miss them.

TIME CHECK

STEP 8 : It is important to go through each question methodically. But, it is also important to keep a strict check of the time. Having an estimate of how many minutes each answer approximately takes is a necessity.

FINISHING TOUCHES

STEP 9 : Recheck your answers. Go back and proofread, check your punctuation, etc.

STEP 10 : Draw a line at the end of each answer, making it clear to the examiner that the answer is complete.

WHY GET SYSTEMATIC? THE LOGIC.

1. A cool and calm head is the biggest asset you can rely on while giving an exam. In order to get rid of exam anxiety, it is necessary to set your approach right, right from the start. Proceeding from easy to hard -

- Does a lot to calm those anxious nerves.
- Helps focus your energy on the questions you know the most about, also ensuring that you score the maximum on these.
- Gives you a better chance of having more time to work on the difficult questions later.
- Builds your confidence as you know exactly where you stand.

2. 'Brain dump' is a crucial part of the exam. When you come into the exam hall, your mind is filled with content. It is crucial to write it all out as points or as outlines on a piece of paper. This ensures that you can think clearly for the rest of the exam and not fear about forgetting anything.

3. Setting a time frame for each answer has the same soothing effect on the mind and closes the window of running out of time or writing in a rush.

4. A systematic approach removes panic from the mind and allows you to sail smoothly through the process of the examination.



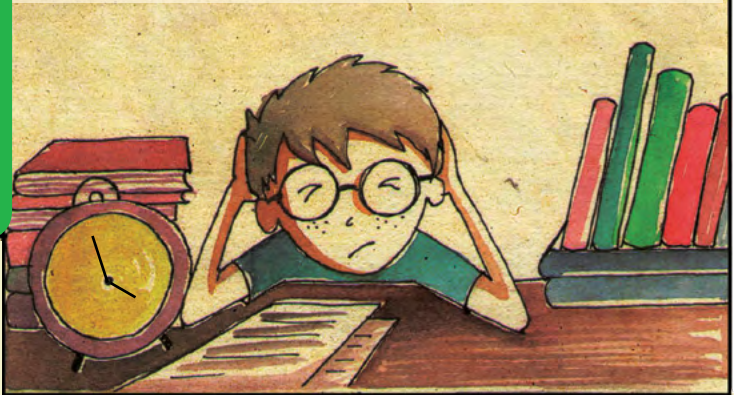
Pioneer Boy

WRITTEN BY JOANNE CARLO

ARTWORK BY SAUDAMINI TAMBAY

BEFORE HE GOT TIME TO WONDER, A GREAT IDEA CAME TO HIS LITTLE MIND – ASSOCIATE CIVICS AND ECONOMICS WITH DAILY LIFE, AND TAA DAA, ONE CAN GIVE EXAMS EVEN IN THE BLIND!

HE SAT DOWN TO STUDY, HIS TEXTBOOKS IN HAND, CIVICS AND ECONOMICS HE BEGAN WITH, BUT NO CONCEPT COULD HE UNDERSTAND.



SO, HE MADE DAD THE PRIME MINISTER ELECTED BY THE PARLIAMENT, HE WONDERED IF HE GOT THE POST BY RESPONDING TO AN ADVERTISEMENT.

HE THEN MADE MOM THE PRESIDENT — WHO HAD THE SUPREME POWER AS THE FIRST CITIZEN OF INDIA! AND FAIL TO EXERT IT SHE WOULD NOT, FOR SHE KNOWS THE CONSTITUTION BETTER THAN ANY ENCYCLOPAEDIA.



BEFORE HE COULD LOSE FOCUS, HE QUICKLY CALLED SAM, ONE OF HIS COUSINS, AND APPOINTED HIM AS THE CHIEF MINISTER, A CM WHO LOVES HIS RAISINS!

TOGETHER THEY SAT AROUND THE TABLE, THE PRIME MINISTER, PRESIDENT AND CHIEF MINISTER, THEY DRILLED INTO HIM, ALL THE FUNDAMENTAL RIGHTS AND DUTIES OF A CITIZEN, JUST LIKE A WEDDING BANDMASTER!





Economics is what make the states run!

Uncle Albert can be the Finance Minister!

JUST WHEN HE THOUGHT HE WAS ABOUT DONE WITH IMAGINARY CIVICS, ALONG CAME UNCLE ALBERT WHO LOVED TO TALK AND TALK ABOUT ECONOMICS.

WITH HIS FAMILY ACTING AS CHARACTERS FROM HIS TEXTBOOKS, CIVICS AND ECONOMICS BECAME EASIER, JUST NAME THE CONCEPT AND HE COULD EXPLAIN IT CRYSTAL CLEAR!

1947

Constitution

Report Card
CIVICS A+
ECONOMICS A+
RANK - 1st

HIS IMAGINATION IT IS WHO HE HAS TO THANK, FOR ALLOWING HIM TO DO WELL AND GRAB THE TOP RANK.

ECONOMICS
PHYSICS
HISTORY
MATHEMATICS

WITH SUCCESS ASSURED, CIVICS AND ECONOMICS HE LEARNT, AND WONDERED WHAT OTHER SUBJECTS HE COULD APPLY IT TO, WITHOUT GETTING HIMSELF SUNBURNT!



A FINE TECHNIQUE HE HAD INDEED DISCOVERED, A TECHNIQUE HE SUPPOSED NOT MANY HAD YET CONSIDERED!

ADVISORY

'TRY IT CAREFULLY'
HE SINCERELY ADVISED,
FOR THIS IS A SECRET THAT
SHOULDN'T BE MUCH
ADVERTISED!

The End.



FOOD FOR THE BRAIN

by Priyanka Talreja

What you eat during exam time is crucial. It can make you lethargic or keep you upbeat. Since we don't want to be lazy at such a time, here's a list of food items that will help your system during exams.



Health Punch #1: Green tea Key Ingredient: Polyphenols

A magazine called Psychology Today has revealed that polyphenols, the bitter-tasting substance in green tea, can actually protect the brain from wear and tear. It has been found that polyphenols also help in the production of dopamine, which is a key chemical that ensures a positive mental state.

Helps in: Brain protection and mood enhancement.

Health Punch #2: Eggs Key Ingredient: Choline

Choline is the B-vitamin-like substance that our body needs. Studies have found that by increasing the intake of choline, memory can improve drastically. Egg yolks are known to be among the richest and easiest natural sources of choline. So, scrambling a few eggs every now and then seems to be a good way to go.

Helps in: Memory improvement.

Health Punch #3: Salmon / Walnuts Key Ingredient: Omega-3- fatty acid

The omega-3 fatty acid is a major acid found in the brain. Eating foods rich with this can improve brain function and mood. Fish is also easily digestible and makes for a great option for exam food. If you are allergic to it or are a strict vegetarian, you can stick to walnuts.

Helps in: Brain function improvement.

Health Punch #4: Dark chocolate

Key Ingredients: Flavonoids and Caffeine

This option acts as a good treat and is worth working for. It is a known fact that, in small quantities, 75% cacao content or higher dark chocolate can lower blood pressure and cholesterol because of its powerful antioxidant properties from the flavonoids. The best use of dark chocolate comes from caffeine that can help focus energy. But you must be aware that too much caffeine will create mood swings and can actually work against you.

Helps in: *Focus and Concentration*

OTHER MUST-HAVES

Other than the top 4, here is a list of other beneficial foods:

Fruits

Bananas and oranges are said to be some of the best revision helpers out there. This is so because they give you energy at a slower rate, making you more productive in the long-run. Other fruits that help are: grapes, strawberries and apples.

Vegetables

Spinach is a green that is packed with iron. No exam taker should avoid this. Other vegetables which are good brain food are kidney beans, chick peas and lentils.

You can also have legumes such as soya, for memory.

Nuts and Oats

If you want to snack or pop items during your revision, eating nuts is the way to go. Almonds and walnuts are particularly good for memory. Oats and porridge are also really good. Choose these instead of fast food.

Water

This is the best liquid to go for. Dehydration can be a real brain-stopper. So, make sure you keep your cerebral muscles at peace by ingesting plenty of water. It will also help you relax when the going gets tough.

MUST NOT-HAVES

Here's a list of items to avoid during exams:

- **Snack foods** like biscuits and fries.
- Foods made of **white flour**, such as **cookies, cakes, and muffins**. These require additional time and energy to digest.
- Foods that are **high in refined sugar**, such as **chocolates, desserts, and candies**.
- **Coffee**, as it contains too much caffeine.
- **Rice or potatoes**, eaten in large quantities, can make you feel heavy and sleepy. ■





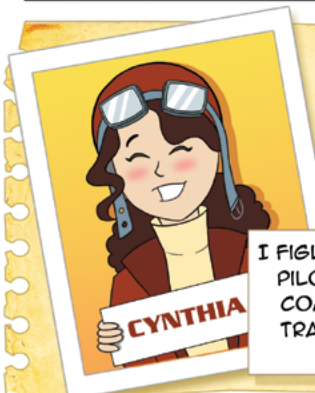
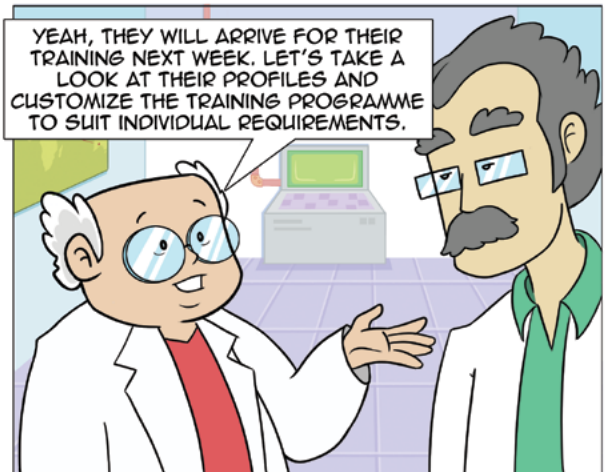
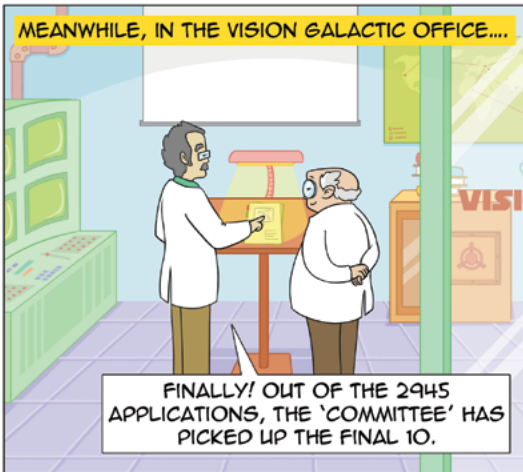
THE SMARTIES

STORY: SASIKANTH C & PRIYANKA TALREJA

MEN ON MARS: EPISODE 3

ART & LETTERING: POOJA PRABHAKARAN

PREVIOUSLY... THE SMARTIES DISCUSS THE MANNED MISSION TO MARS ANNOUNCED BY VISION GALACTIC. THEY DISCUSS ABOUT HUMANITY'S GREED FOR MONEY, FAME AND POWER, AND HOW IT MIGHT MEAN DISASTROUS CONSEQUENCES FOR THE MARS MISSION. GOING BY THE POSITIVE TRACK RECORD OF THE HEAD OF VISION GALACTIC, MARK ADAMS, THEY HOPE THAT ALL WOULD BE GOOD.



Name: Cynthia Thomas

Age: 22

Profession: Pilot & Space Engineer

I FIGURED OUT WHEN I WAS 10TH GRADE THAT I WANTED TO BE A PILOT. I AM THE YOUNGEST WOMAN PILOT EVER TO FLY SOLO COMBAT JETS FOR THE ASIAN AIR FORCE. I AM EXTENSIVELY TRAINED IN BOMBING, ROCKET ATTACK, COMBAT SEARCH AND RESCUE, AND SPECIAL HELI-BORNE OPERATIONS.





Name: Hic Hopper

Age: 35

Profession: Handy Man

THERE'S NOTHING ON THE EARTH I CAN'T FIX.



Name: Samuel Miranda

Age: 41

Profession: Doctor & Biologist

I AM A MD-PHD (DOCTORATE OF MEDICINE AND PHILOSOPHY), AND PHD IN BIOLOGY. I AM ALSO A PROFESSIONAL DIVER AND HAVE DISCOVERED 5 NEW MARINE SPECIES.



Name: Sarah Cane

Age: 28

Profession: Architect

I AM THE WINNER OF THE GIAA (GLOBAL INSTITUTE OF AMAZING ARCHITECTS) AWARD FOR 3 STRAIGHT YEARS, SINCE 2011. I CAN HELP SET-UP A GREAT COLONY ON MARS.



Name: Rupert Soph

Age: 46

Profession: Business Man

SOMEONE ON THE TEAM NEEDS TO BE SHREWD AND BE ABLE TO NEGOTIATE EVEN WITH ALIENS!



TO BE CONTINUED..



Control your Time

Organizing what you are studying reduces pressure by helping you manage your time effectively. Let's make a timetable for the exams.

by Pushkar Samant

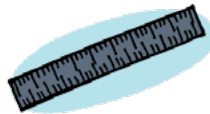
You need:



1. Paper



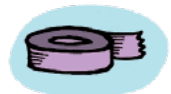
2. Pen / Pencil



3. Scale

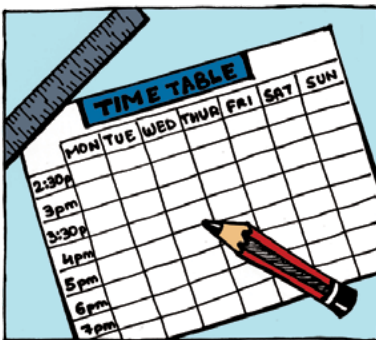


4. Colour pencils

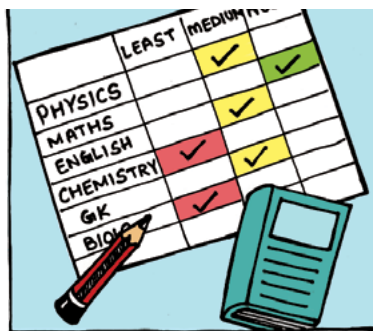


5. Tape

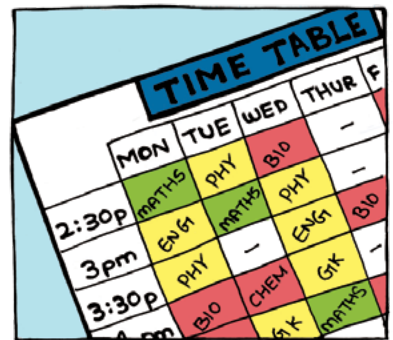
Method :



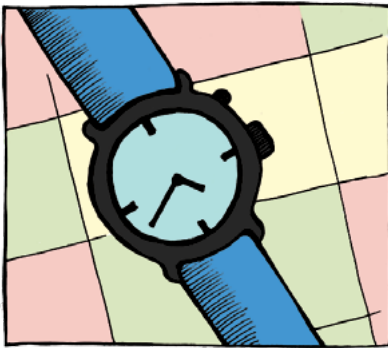
1. Draw a simple time table on a sheet of paper. Each column represents the 'date and day', while each row represents the 'time', which is divided into 30-45 minute blocks.



2. List all the subjects you need to study and rank them based on how confident you feel about them. Mark them as 'least', 'moderate' or 'most'. This will let you focus more time and energy on your problem areas.



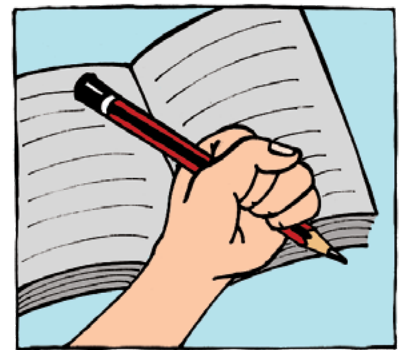
3. Once you finish ranking the subjects, assign a colour to each. Then, write them down inside each box, against the corresponding date/day and time of that day. Fill up each box with the colour of that subject.



4. 30-45 minute time blocks automatically help you create breaks. That way, you can rest your tired eyes, stretch your legs and even get a healthy snack.



5. Stick the timetable to the wall of your study room or at multiple of your favourite 'study spots'.



6. Remember - you need not follow the timetable down to seconds. It's just a system to help you plan better and execute the plan without losing focus.

Why Make a Time Table?

- Planning is very important if you want to be a great student.
- A schedule helps you utilize your time more productively. It helps you complete your course within a particular time.
- It tells you what part of your course you need to study that day or week or month. This lets you complete your preparation well before the exam season.
- Mainly, it helps you study in an organized way. The systematic procedure followed by the brain and mind while studying helps you avoid avoids panic situations and stress.

Now, make your timetable, stick it on the wall and send us photographs!



BREAK BUSTER

by Joanne Carlo

*Sure, going out to the playground is an option,
but when you have an exam the next day, do you have the time?*

Are you worried? Angry? Uncomfortable? Are all these emotions making you feel bad – giving you a painful tummy ache or headache? Why is this happening? Believe it or not, you are undergoing stress! Now, before you begin stressing yourself out about stress, here are some fun techniques – perfect stress busters when you can't afford long breaks.

1) TALK A TALK

For beginners, you can talk to your parents or elder sibling about what's bugging you. It could be that you are tired or not prepared enough. Talking about your problem can help put it in perspective and throw a new, objective view on it.



2) BREATH IN, BREATH OUT

Settle down on the floor or on a soft fluffy pillow and breathe in deeply until you can't fit any more air in. Then, breath out super fast, along with the icky feeling inside. Keep doing this until all the bad stuff is pushed out. Doing this not only raises levels of oxygen in your blood, but also presents a wide range of stress-free benefits.

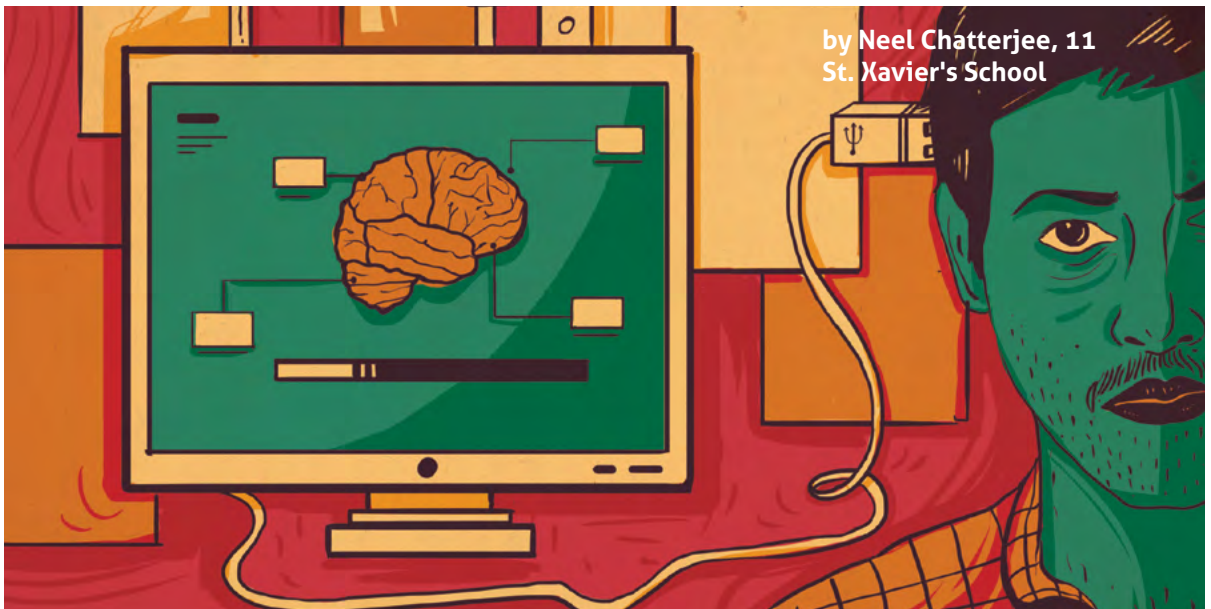
3) DREAM A DREAM

Lie on your bed, close your eyes and dream. Don't sleep, hello! Imagine you are walking along grassy meadows. Feel the prickly grass under your feet and smell the fresh flowers. Keep adding elements to your dream – a deer here, a bunny rabbit there. Let the adventure unroll. This helps your brain relax, and all the mental programs that you constantly run in it cease to operate – allowing you to rest in a state of pure being.





2050 A.D. SCIENCE FEST



by Neel Chatterjee, 11
St. Xavier's School

Artwork: Parvati Pillai

"I have made it!" I cried, "I have made the... what shall I call it?"

"So you have finally built a device that enables data transfer between a human brain and a computer?" asked Tangy, my personal robot-cum-computer.

"Oh yes," I said, exhilarated.

"So, call it a brain drive, just like 'pen drive'," suggested Tangy.

"Good idea!" I answered.

Just then, my father came into the room. "What's up, kids? What are you up to?"

"Dad!" I shouted in excitement. "I have built a brain drive. Want to give it a try?"

"What are you talking about?" asked my father, confused.

I connected the 'brain drive' to his head. The little machine drilled a nano-hole in his skull and latched on to his brain cells.

"Can you feel anything?" I asked eagerly.

"Oh, yes!" he said, "I can see a computer screen."

"Scanning for viruses," declared Tangy. "Ready to use!" he beeped in a while.

Soon, I could see all the info stored in my father's memory. I clicked on 'current thoughts' and saw that he was hungry. I had Tangy fetch a sandwich from the kitchen.

My father was so surprised that he jumped off the chair. "How did you guys come to know that... you are a genius!" he exclaimed.

"I know, and Tangy knows too. We are going to win this year's Nobel for Technology!" ■



How do scientists know the mass of the Earth?

by Ashish Panigrahi



Jupiter has a mass that is over 317 times the mass of the Earth. Its volume is 1,321 times the Earth's volume!

Image Source: Wikimedia Commons

Yes indeed, how? After all, we cannot place the Earth on a weighing scale.

This is one of the many situations in which the geometry and trigonometry you study at school help! These subjects seem tough, but when you witness the fascinating ways they are applied in real life, you can't help but love them.

Newton demonstrated that two masses always have a gravitational attraction for one another. Let us assume that the Earth is one of the masses (M), and a 1kg sphere is the other mass (m).

As per Newton's law of gravitation, the force between both the masses is:

$$F = G(M \cdot m / R^2)$$

'F' is the gravitational force of attraction
G is a constant ($6.67259 \times 10^{-11} \text{ m}^3/\text{kg s}^2$)
'R' is the radius of the Earth

Rearranging this formula to obtain the mass of the Earth, we get:

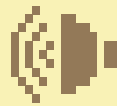
$$M = F/G(R^2/m) = 6 \times 10^{24} \text{ kilograms!}$$

Simple, isn't it. But, how do we know the values of 'G' and 'R'?

Well, you find out!

Your summer holidays start in the next few days. Research on the internet and tell me how to obtain the values of 'F' and 'R'. It is very simple physics and trigonometry. Of course, I will give a detailed answer in the June issue. But first, you try. I will send a special gift to the one who emails me the most accurate answer. ■

Have a burning question? Email it to us at brainwave@ack-media.com with 'Ask Us Why' as the subject. The best question gets published and wins a cool Amar Chitra Katha comic!



Ask and you shall receive!

by Joanne Carlo

Take a deep breath, look the other in the eye and ask, ask, ask!

Have you ever heard about the saying, 'ask and you shall receive?' Tweaking it a bit for my convenience, I'm going to cook up my own saying. It goes 'ask, and you shall be answered.'

I'm sure that many times, you sat in a class, itching to ask that one question you desperately need an answer for.

For that matter, I'm also sure that you sat in class, itching to answer that one question your teacher just asked. You know the answer. But, goodness me! You are shy. Not only that, your heart is pounding, your legs are shaky and your hands are sweaty! But, why are you so very afraid?

What you are suffering from is stage fright. Muscles in the body begin to contract, and your legs and hands start shaking. Your blood pressure increases, causing the body to sweat profusely. You breath heavy, pupils dilate and you feel the much dreaded nausea and butterflies in your stomach.

Who is an introvert?

Being shy is not being an introvert. Shocking, isn't it? Glad we cleared that up! An introvert is a person who is energized by being alone and whose energy is drained by being around other people. Apparently, introverts make up about 60 per cent of the gifted population, but only about 25-40 per cent of the general population! What are you?



Image Source: Shutterstock

But, worry not. There are simple ways in which you can overcome this, be more of an extrovert and be the coolest kid in class! Boy, I wish I knew these when I struggled through my school years! Lucky you!

First, know that you are just behaving very queer. If you have a question, ask! If you don't ask, you will never get an answer.

The teacher or your classmates will not gobble you up for lunch if you ask a silly question. What's the worst that can happen? They will laugh? How does that matter more than standing up and asking?

Next, If you still can't muster up courage, practise in front of your friends until they know your lines so well, they'd know what to expect when your hand shoots up in class!

When the other kids in class ask questions, you are learning too, right? So please, ask questions – other children will gain from your insight, intellect and awesomeness!

Knowledge is power, but sharing it is powerful! Don't you want to be powerful? The world needs confident, creative and responsible leaders. Be that, and more! ■



CODING

THE

EXAM

by Arby

Memory, we tell you,
is a tricky one.
It can be choosy and even
stubborn.

"I refuse to remember!"
It will shout blatantly.
But there are ways out to trick
memory!

Memory is nothing but the process in
which information is encoded,
stored, and retrieved.

So, make studies fun and
add a dash of codes please!

Here is an example. Say you need to
study the periodic table.

The first two rows of the periodic table
of elements are:

H - Hydrogen	He - Helium
Li - Lithium	Be - Beryllium
B - Boron	C - Carbon
N - Nitrogen	O - Oxygen
F - Fluorine	Ne - Neon

An awesome code for this?
Here is what it could be:

{ **H** and **He**,
Met **Li** **Be**,
And came **BaCk**
along with their friends
N - **O** and **F** - **Ne**! }

Coding is fun and makes for enjoyable studies.
Put your thinking cap on, be creative and code those boring textbooks into
a world full of stories. Email us a few to get a chance to win a surprise gift! ■



Why did we choose this theme?

"I hate being a student! And I hate exams the most!"
said one student to another.



Artwork: Saudamini Tamboy

And we heard. After all, we were the same when in school. So, we acted.

Just before your exams, we decided to bring you a whole issue on the 'right' way to prep for exams.

You might not know it, but very often, you miss out on those marks because you have not been resting enough or eating right or relaxing your brain. Believe it or not, these small things are what matter the most.

As we always say, there's science in everything. After reading this issue, you will realise that there is science even in the way

you prepare for your exams. Understanding that and knowing the science makes a huge difference!

Knowing this, we sat down, put ourselves in your shoes and compiled this issue. We have written about preparing yourself well, physically as well as mentally. We have outlined various methods that enable you to learn with fun and with a lasting effect. Analyse and pick what suits your situation the most.

We hope you enjoyed the world of 'Doing It Right'. Now, go crack the exams. All the very best! ■

Winners of various activities in the February 2014 issue are:

Toy Box: **Prasad Chalkar**

Ask Us Why: **Erick Joshua**

Eye See: **Anish YRD**

Fan Fiction: **Mukund Rao**

Treasure Hunt: **Shawn Pereira**

Planet Ninjas: **Nachiketa S R**

Magic Science: **Vibhu Ravindran**

Sci-Q Time: **Devanshi**

DIY: **No winner**

Mr. X (YouTube): **Shruthi Valayapathi**

The BW Smartenstein title, certificate and mystery gift go to **Akhil Sarvesh Ganeshan**.

For more details about smartenstein, visit - www.bwmag.in/category/bw-smartenstein

The new Student Board winners have been declared! Check out p29 for their details, including pictures.

Readers, please note that you have to send in your entries with the right subject line, your picture, age, school, accurate address along with pin code, and phone number.

Entries without these details often get lost in the mountainful of emails we receive.

Don't risk it!



Letters from Readers

The February 2014 issue of Brainwave was awesomely exciting! However, many mistakes are appearing in Brainwave even though the 'SPOT THE ERRORS' contest is no more in play. For example, the spelling of 'teach' was mentioned as 'teache' in HONEYBEES TEACH GEOMETRY. Was it an error on purpose or was it a human error? Please do not repeat any such error.

Jeenal Patel's illustrations are good! Please bring back Abhijeet Kini's illustrations for THE SMARTIES comic strip. That was good! The original SMARTIES touch is not there in the illustrations nowadays. But, Brainwave is a totally awesome magazine. Do let me know how I can get all issues right from Brainwave's launch up to March 2012.

Nachiketa S R, via email

Dear Nachiketa, The 'teache' spelling mistake is a human error. I am responsible for that. Sorry, and thanks for bringing it to our notice. Did you find any errors in the March 2014 issue?

With regard to the Smarties comic, we are confident that you will love it now. A new adventure, that too to Mars, needs a new illustrator :)

SK, Editor

I love reading Brainwave. I get excited when the postman comes to my door with a Brainwave in his hand.

I would like to participate in the BW Student Board. What is the procedure? Is there a price to be paid for it? Please reply as early as possible as I am very excited.

Thanks to Brainwave as it helped me develop more and more interest in science

Vrushti Jain, via email

Dear Vrushti, great to hear from you. You need not pay anything to participate in the Student Board. We have emailed the details to you.

SK, Editor

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Class: _____

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.....**NOTES**.....



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WHAT IS BRAINWAVE?

Brainwave is a children's science magazine from the house of Amar Chitra Katha and Tinkle.

We understand that each child has a different aptitude and love for science. Hence, we simplify science into forms that excite them - comics, stories, fun-do activities, contests and fascinating facts.

Give your child a Brainwave, and science will be just another game!



STUDYING THE SOCIAL WAY

Here's a study technique that encourages you to study in groups! And believe it or not, it actually helps you learn, recall and retain well!

by Bhoo



Your exams are round the corner, you have loads of material to cover and you don't know where to begin. Well, call your friends home, and study! As long as you don't get carried away chatting, studying in groups has more benefits than you can imagine! Here are a few:

- 1) Whenever you find your motivation slipping away, your study group will help serve as a source of encouragement.
- 2) Asking questions and getting your doubts cleared is much easier in a trusted group.
- 3) Healthy discussions help you remember and retain complex concepts.
- 5) You learn new tips from your group members – better way to do well, isn't it?
- 6) Comparing class notes with your group

members helps you see if you've missed anything or noted something wrong.

7) Helping group members will help you master concepts. Everybody wins!

8) Interacting with friends can actually make studying fun!

In the same way, you can use your family's help to revise. Here's how:

Explain concepts out loud, and they will suddenly seem crystal clear!

Sometimes, a classroom setting is not enough for you to understand everything clearly. Sitting down and explaining all that you don't understand aloud to your sibling or to your parents helps clear your doubts and strengthen your concepts, thereby helping you ace the class easily! ■



It's study time!

by Bhoo

Image Source: Wikimedia Commons

What's the best time to study, in your case? It varies for each person, you know? Dr. Dodo gives us some tips regarding this.

Dr. Dodo was giving a lecture on how to prepare for exams. After the talk, during the question-answer session, Rajesh, one of the students, asked him, "Sir, what is the best time to study?"

Dr. Dodo smiled and said, "It's different for different students. Some students like to study in the night, till morning. Some students prefer early mornings or evenings."

"But, according to you, what is the ideal one?" asked Ahmed.

"I would suggest that you get up early in the morning and study. It is usually in the morning that your mind is fresh and relaxed," Dr. Dodo continued, "And since your brain is more active and alert at that time of the day, studying those subjects that need more attention is a great idea."

"Sir, I prefer to stay up late and study. Is that fine?" Danny asked.

"Well, it is not wrong. But, since your

school starts in the morning and so do your exams, it is better to follow the routine that suits your timetable the best," Dr. Dodo reasoned.

He further added, "Do not alter the routine just for exams. Give proper rest to your mind and brain. Science shows that the amount of sleep you get directly affects your academic performance."

The students drank in Dr. Dodo's tips. He wished them luck for their exams and left to another lecture. ■

Tips

- Figure out if you are a morning person or a night person. Try getting up early to study. In most cases, it works wonders.
- Decide an absolute 'start time' for studying, if you wish to study late. Your brain should be just fine at six or seven o'clock in the evening.